MIDWAY

16-44060-101
October 20, 1997
FINAL

CRUIS'N USA
-to-
CRUIS'N WORLD

Conversion Kit Manual

THIS MANUAL CONTAINS....
INSTALLATION AND OPERATION INSTRUCTIONS

MIDWAY GAMES INC. 3401 NORTH CALIFORNIA AVENUE
CHICAGO, ILLINOIS 60618

CRUIS'N USA
-to-
CRUIS'N WORLD

Conversion Kit Manual

The information in this manual is current at time of its release.

Fill out and mail in the game Registration card. Be sure to include the kit serial number. For your records, write the serial in the manual.

Serial Number_____

MIDWAY Games Inc. reserves the rights to make modifications and improvements to its products. The specifications and parts identified in this manual are subject to change without notice.

TABLE OF CONTENTS

Section One – Installation and Operation

Safety Notices 1-2
Conversion Procedure 1-3
Inspection and Parts List 1-3
Installation 1-3
Cruis'n World CPU board 1-4
Cabinet Set-up Procedure 1-5
Servicing 1-6
Game Features 1-9
Starting-up 1-9
Player Controls 1-9
Dash Board Diagram 1-9
Game Operation 1-10
Menu System Operation 1-11
Operation 1-11
Main Menu 1-11
Diagnostic Tests 1-12
Switch Test 1-12
DIP Switch Table and Test 1-13
CPU board Test 1-15
Sound board Test 1-15
Linking Test 1-15
Steering Wheel Test 1-16
Monitor Patterns 1-16
Burn-in Test 1-16
Lamp Test 1-17
Game Audits 1-18
Adjustments Menu 1-22
Standard Pricing Table 1-23
Custom Pricing Table 1-24
Utilities 1-27
Calibrate Controls 1-28
Adjust Volume 1-28

© Copyright 1997 MIDWAY GAMES INC.

CRUIS'N USA
-to-
CRUIS'N WORLD

Conversion Kit Manual

SECTION
ONE

Installation & Operation

This manual contains only the new CPU and game features for Cruis'n World. See the Cruis'n USA Manual (16-40036.1-101) for parts and wiring information.

SAFETY NOTICES

The following safety instructions apply to all game operators and service personnel. Specific warnings and cautions will be found throughout this manual where they apply. We recommend that you read this page before preparing your game for play.

⚠CAUTION

DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

AC POWER CONNECTION. Before connecting the game to the AC power source, verify that the "line voltage selection chart" jumper wires are installed correctly for the line voltage in your area. For details, refer to Section 3.

HANDLING ELECTRONIC DEVICES: This product uses complex electronic components that are SENSITIVE to static electricity. The following precautions must be observed and followed prior to handling any of the electronics that make up this game.

1) Discharge any static electricity build up in your body by touching the safety ground stud of the AC power pack chassis. This is to be done PRIOR to touching or handling the electronic assemblies.
2) Store the electronic assemblies in an anti-static area. Anti-static bags are to be used to store the CPU assembly.
3) DO NOT remove or connect any electronic assemblies when the cabinet power is on. Doing so will damage the electronic assemblies and void the warranty.

PROPERLY GROUND THE GAME. To avoid electrical shocks, do not plug in the game until it has been inspected and properly grounded. MIDWAY games should only be plugged into a grounded 3-wire outlet.

DISCONNECT POWER DURING REPAIRS. To avoid electrical shock, disconnect the game from the AC power source before removing or repairing any part of the game.

USE THE PROPER FUSE. To avoid electrical shock, use the replacement fuse which is specified in the parts list for this game. The replacement fuse must match the original fuse in fuse type, voltage rating, and current rating.

HANDLE FLUORESCENT TUBE AND CRT WITH CARE. If you drop a fluorescent tube or CRT and it breaks, it will implode! Shattered glass can fly eight feet or more from the implosion.

EPILEPSY WARNING

A very small portion of the population has a condition which may cause them to experience epileptic seizures or have momentary loss of consciousness when viewing certain kinds of flashing lights or patterns that are present in our daily environment. These persons may experience seizures while watching some kinds of television pictures or playing certain video games. People who have not had any previous seizures may nonetheless have an undetected epileptic condition.

If you or anyone in your family has experienced symptoms linked to an epileptic condition (e.g. seizures or loss of awareness), immediately consult your physician before using any video games.

We recommend that parents observe their children while they play video games. If you or your child experience the following symptoms: dizziness, altered vision, eye or muscle twitching, involuntary movements, loss of awareness, disorientation, or convulsions, DISCONTINUE USE IMMEDIATELY and consult your physician.

Conversion Procedure

Inspection

Unpack the materials from the carton and inspect them for obvious signs of damage. Use this checklist to ensure that your kit is complete. You need only a hex-head screwdriver to perform this conversion.

	Part Number	Item	Quantity
[ ]	A-21154	Cruis'n World CPU board	1
[ ]	16-10360	Installation instructions	1
[ ]	16-44060-101	manual	1
[ ]	31-2445-3	marquee	1

Installation

HANDLING ELECTRONIC DEVICES: This product uses complex electronic components that are SENSITIVE to static electricity. The following precautions must be observed and followed prior to handling any of the electronics that make up this game.

1) Discharge any static electricity build up in your body by touching the safety ground stud of the AC power pack chassis. This is to be done PRIOR to touching or handling the electronic assemblies.

2) Store the electronic assemblies in an anti-static area. Anti-static bags are to be used to store the CPU assembly.

3) DO NOT remove or connect any electronic assemblies when the cabinet power is on. Doing so will damage the electronic assemblies and void the warranty.

PROPERLY ATTACH ALL CONNECTORS. *Make sure that the connectors on each printed circuit board (PCB) are properly connected. If the connectors do not slip on easily, do not force them. A reversed connector may damage your game and void the warranty. All connectors are keyed to fit specific pins on each board.*

1. Turn off and unplug the game. Remove the rear door of the cabinet.

2. Remove the hex-head screws holding the Cruis'n USA CPU board's cover in place and lift the cover off the rack. Set the cover and the screws aside.

3. Unplug the cable connectors from the Cruis'n USA CPU board. Unscrew the CPU board from the rack and place it in an anti-static bag. Set the screws aside.

4. Remove the Cruis'n World CPU board from its anti-static packaging. Place it in the same position on the rack as the Cruis'n USA CPU board. Using the same screws, secure the board to the rack.

5. Plug the cable connectors into the new CPU.

6. Being sure not to pinch any wires, replace the CPU board's cover and fasten it with the screws. Replace the rear door.

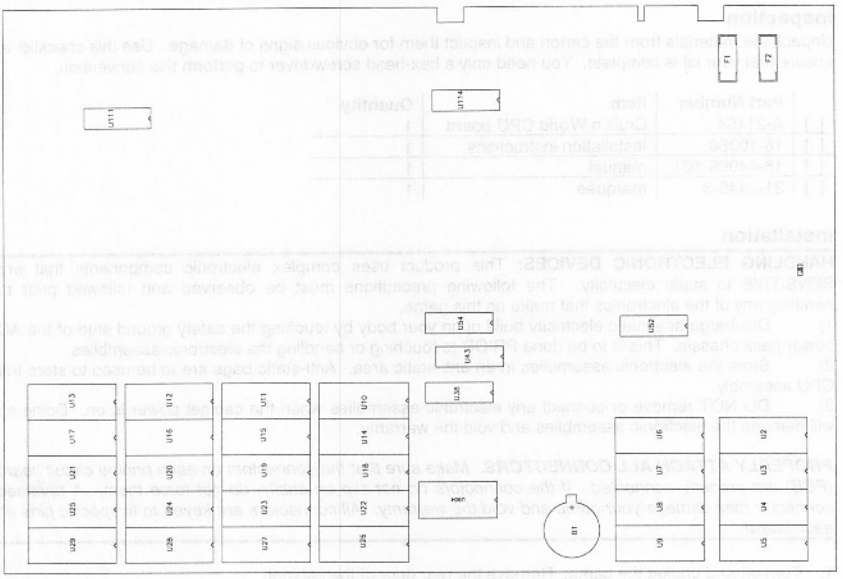
7. From the front of the game, remove the five hex-head screws that hold the plastic strip above the marquee glass. Set the screws and the plastic strip aside.

8. Carefully lift the Cruis'n USA marquee out from behind the glass and replace it with the Cruis'n World marquee.

9. Replace the plastic strip above the marquee and secure it into place with the screws.

10. Plug in and turn on the game.

CRUIS'N WORLD CPU BOARD
A-21154



Part Number	Designator	Description
5880-11056-00	B1	Battery, Lithium 3V
5731-14468-00	F1, f2	Fuse SB 3A 5x20mm
A-5343-40060-2	U2	EPROM Assembly
A-5343-40060-3	U3	EPROM Assembly
A-5343-40060-4	U4	EPROM Assembly
A-5343-40060-5	U5	EPROM Assembly
A-5343-40060-6	U6	EPROM Assembly
A-5343-40060-7	U7	EPROM Assembly
A-5343-40060-8	U8	EPROM Assembly
A-5343-40060-9	U9	EPROM Assembly
A-5343-40060-10	U10	EPROM Assembly
A-5343-40060-11	U11	EPROM Assembly
A-5343-40060-12	U12	EPROM Assembly
A-5343-40060-13	U13	EPROM Assembly

Part Number	Designator	Description
A-5343-40060-14	U14	EPROM Assembly
A-5343-40060-15	U15	EPROM Assembly
A-5343-40060-16	U16	EPROM Assembly
A-5343-40060-17	U17	EPROM Assembly
A-5343-40060-18	U18	EPROM Assembly
A-5343-40060-19	U19	EPROM Assembly
A-5343-40060-20	U20	EPROM Assembly
A-5343-40060-21	U21	EPROM Assembly
A-5343-40060-22	U22	EPROM Assembly
A-5343-40060-23	U23	EPROM Assembly
A-5343-40060-24	U24	EPROM Assembly
A-5343-40060-25	U25	EPROM Assembly
5882-13046-00	J6	Shunt
A-21437	U904	PIC Assembly

Cabinet Setup Procedure

GAME LOCATION REQUIREMENTS	
Power:	Domestic 115V @ 60 Hz, 4 Amps Foreign 230V @ 50 Hz, 2 Amps Japan 100V @ 50 Hz, 4 Amps
Temperature:	32^{0} F to 100^{0} F (0^{0} C to 38^{0} C)
Humidity:	Not to exceed 95% relative.

DIMENSIONS (assembled)		
Width	**Depth**	**Height**
30"	61"	67

WEIGHT (crated)	
Pedestal	**Game**
95lb	395lb

Installation and Inspection

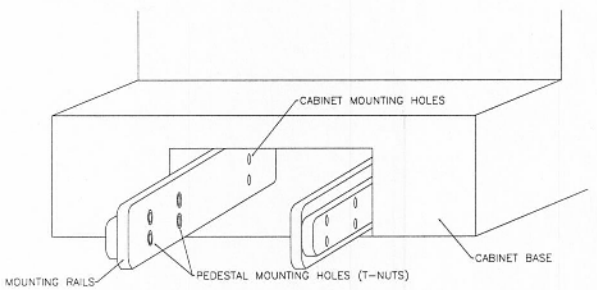
1. Remove all items from shipping containers and set them aside. Inspect the exterior of the cabinet for any signs of damage. Remove shipping cleats from the bottom of the cabinet. Remove pedestal-mounting rails packed inside seat liner.

2. Remove keys from the taped coin return slot. Unlock and open the coin and cash box doors. (Leg levelers and spare parts are stored in the cash box).

3. Tilt or lay the cabinet down. Locate two threaded holes on the bottom of the cabinet and install one leg leveler (with its hex nut) in each hole.

4. Stand cabinet upright and make certain it is in a stable position. Level the cabinet.

5. Leg levelers come installed on the pedestal assembly and need only to be leveled before installing onto the cabinet assembly.



6. Attach mounting rails to cabinet base using four 1/4-20 hex-head bolts (see above diagram for proper placement). Do not tighten bolts completely, some movement is required in the mounting rails to align holes with pedestal assembly.

7. Place pedestal assembly on mounting rails. Align the holes and carefully pull the pedestal away. Hold mounting rails in position and tighten bolts inside cabinet.

8. Connect speaker wire from inside pedestal to cabinet. Attach pedestal assembly and bolt together using eight 1/4-20 tamper proof screws. Use the T27 wrench, included in the spare parts, to install these screws.

9. Remove rear door of cabinet. Inspect cabinet interior for any signs of damage. Check all major assemblies to assure that they are mounted securely.

10. Refer to the games Cabinet Wiring Diagram (section 3), and check to see that all cable connectors are correctly secured. DO NOT FORCE CONNECTIONS. Watch for damaged connectors and avoid making reversed connections.

11. Determine the value of your line voltage with a meter. Then, check the jumper wire to the main power supply transformer. Be sure it is jumpered to correspond to your local line voltage value. If necessary, change the jumper wire to the transformer in accordance with the Jumper Chart in Section Three.

12. Replace rear cabinet door and screw (lock) it securely. NOTICE: Tamper proof screws are included with the spare parts. These screws are optional and may be used to secure the rear door panel. The T20 wrench is used for the installation of these screws. Close and lock the front coin and cash box doors.

13. To attach line cord, the four Phillips-head screws that mount the line cord cover plate to the rear cabinet. Match the prongs on the plug with the holes in the receptacle and push line cord securely into place. Make sure cord aligns with the indentation of plate (indentation should point toward bottom of cabinet). Remount line cord cover plate. If desired, tamper resistant screws are provided to remount cover plate.

14. Connect the line cord to a grounded (3-terminal) AC wall outlet.

15. Switch ON the game using the ON/OFF switch located on the upper left top of the cabinet, to verify proper operation.

Servicing

Always turn off power to game before servicing.

- **Control Panel**

  Using the T27 wrench, remove four tamper proof screws from the monitor glass retaining bracket, and set bracket aside. Remove four tamper proof screws from under the control panel. Pull the control panel out and disconnect the wiring. Before reinstalling the control panel, check for proper wire connections, including ground strap.

- **Seat**

  Using the T27 tamper proof wrench, remove three screws from each side of the seat mounting plate. Lift the seat/mounting plate off the pedestal assembly and place the seat on its back, on a flat surface. The six bolts under the mounting plate can now be removed to replace the seat.

- **Seat Slide Assembly**

  Using the T27 tamper proof wrench, remove three screws from each side of the seat mounting plate. Lift the seat/mounting plate off the pedestal assembly and set aside. Slide the seat assembly forward, and remove the two tamper proof torque screws from the wood panel on top of the pedestal assembly. Slide the seat back and remove the two front torque screws. Lift the wood panel out of the pedestal base and turn the unit over. Remove the four nuts holding the wood panel to the slide assembly. Place the wood panel aside and the slide assembly can be easily accessed.

- **Speakers**

  Control Panel: Two speakers are located behind the control panel. Using the T27 wrench, remove four tamper proof screws from the monitor glass retaining bracket, and set bracket aside. Remove four tamper proof screws from under the control panel. Pull control panel out and disconnect the wiring. The speakers can now be accessed from the back of the control panel assembly.

  Seat: One speaker is located under the seat. Slide the seat assembly forward. Using the T27 wrench remove the two tamper proof torque screws from the wood panel on top of the pedestal assembly. Slide the seat back and remove the two front torque screws. Lift seat assembly and set aside. The speaker can now be accessed from the inside of the pedestal assembly.

- **Viewing Glass**

  Using the T27 wrench, remove four tamper proof screws holding the monitor glass retaining bracket, and set the bracket aside. Carefully raise the glass from the grooved bottom edge and lift it clear of cabinet.

- **Monitor Bezel**

  Using the T27 wrench, remove four tamper proof screws holding the monitor glass retaining bracket, and set bracket aside. Carefully raise the glass from the bottom edge and lift it clear of cabinet. Set it aside. The monitor bezel can now be removed by lifting it out of the grooved edge at the bottom.

- **Marquee Glass**

  Remove five 1/4" hex-head wood screws holding the plastic strip above marquee glass. Set strip aside and carefully lift glass. Store glass carefully to prevent damage.

- **Fluorescent Light Assembly**

  Remove five 1/4" hex-head wood screws holding the plastic strip above marquee glass. Set strip aside and carefully lift glass. Store glass carefully to prevent damage. Disconnect the fluorescent light assembly from its power cable. Remove the screws fastening the assembly to the cabinet and lift out the assembly.

WARNING
If a fluorescent tube drops and it breaks, it will implode!
Use care in handling.

- **Fluorescent Lamp**
  Remove five 1/4" hex-head wood screws holding the plastic strip above marquee glass. Set strip aside and carefully lift glass. Store glass carefully to prevent damage. Remove the fluorescent lamp retainer brackets. Grasp the tube, give it a quarter turn and remove it from its socket. Carefully place a new tube into the socket and turn to reinstall.

- **Monitor**
  We recommend that you read the WARNINGS section thoroughly before beginning this procedure.
  Switch OFF power to the game. Remove the viewing glass and the monitor bezel. Completely disconnect the monitor from all of its cabling, including its chassis ground strap.
  Remove the six flange nuts securing the monitors mounting flanges to its mounting panel. Pull the monitor carefully from the cabinet front.

  ⚠**CAUTION**
  While removing the four flange nuts, firmly support the monitor from the front of the CRT so that it will not slip.

  The monitor DOES NOT contain an isolation transformer in its chassis. It is mounted instead in the Power Chassis Assembly locate on the floor of the Cabinet. When servicing the monitor on a test bench, YOU MUST ISOLATE THE MONITOR FROM THE LINE VOLTAGE WITH AN ISOLATION TRANSFORMER.

Game Features

Cruis'n World is a one-player game.

STARTING UP

Switch ON power to the game. A "rug" pattern appears on the CRT screen. When the "rug" pattern ends, the screen shows a CPU Board map. Bad chips are indicated in red, good chips are in green. The software revision level is shown at the top of the screen.

NOTE: When an error is detected during Start-up Tests, game start-up does not progress, and an error message appears on the screen.

Insert the desired amount of coins or tokens.

PLAYER CONTROLS

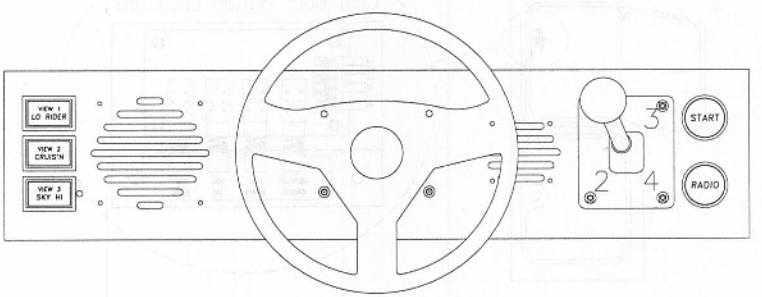
- **Start Button (Green)**
  The start button allows the player to begin game play.

- **Radio Button (Orange)**
  The radio button allows the player to turn radio sounds on and off, and change stations.

- **View 1-Lo Rider Button (Red)**
  View 1 drives the car from inside.

- **View 2-Cruis'n Button (White)**
  View 2 drives the car from directly behind.

- **View 3-Sky Hi Button (Blue)**
  View 3 drives the car from an aerial view.



Game Operation

The Cruis'n' World Control Switches are located inside the coin door. These switches allow the operator to customize some features of the game.

CABINET SWITCHES

The **SLAM TILT SWITCH** detects any forceful vibrations against the Coin Door. This eliminates pounding for free games. It is located on the inside of the coin door.

The **ON/OFF SWITCH** is located on the top right side of the cabinet.

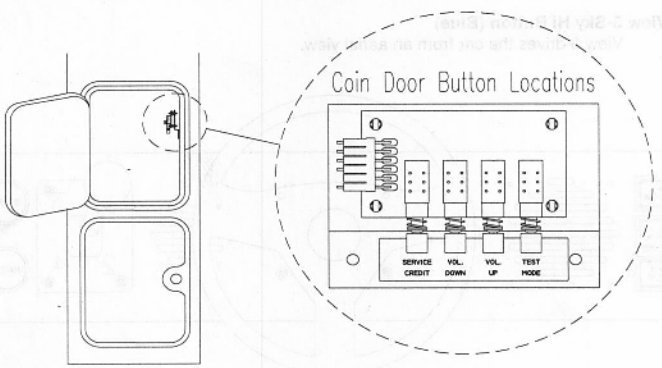
CONTROL SWITCHES

The **TEST MODE SWITCH** activates the games Menu System. Press the Test Mode Switch to access the Main Menu. To exit the menu system, use the Volume Down Switch and select EXIT TO GAME OVER from the Main Menu, then press the Test Mode Switch or use the Service Credit Switch.

The **VOLUME UP SWITCH** moves up through the menu selections or adjustment choices, and raises the sound level of the game when in game play.

The **VOLUME DOWN SWITCH** moves down through the menu selections or adjustment choices, and lowers the sound level of the game when in game play.

The **SERVICE CREDIT SWITCH** is a special feature switch that allots credit without affecting the game's bookkeeping total and is used to get out of a menu selection or return to the main menu.



Menu System Operation

OPERATION

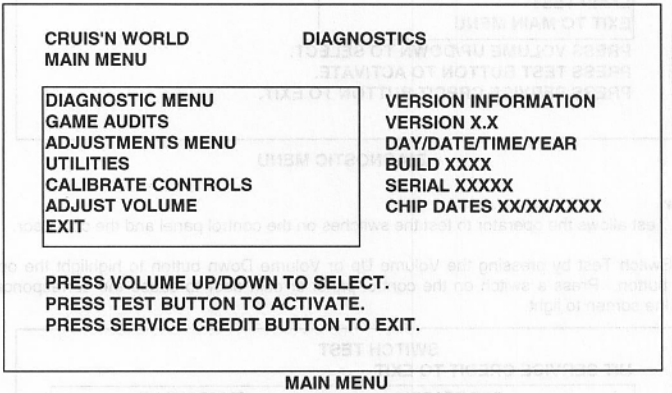
All **Cruis'n World** Game Audits, Adjustments, and Diagnostics are options of the Main Menu. Each option, in turn, has its own menu, listing several choices that may be acted upon as desired.

Press the Test button to activate the Main Menu (shown below). Press the Volume Up button or Volume Down button to cycle through the menu options. Notice that the options are highlighted, by turning red, in sequence. Press Test button to activate a red highlighted option.

NOTE: Only a red highlighted option can be activated.

To return to game play mode you can press the Volume Up or Volume Down button to highlight EXIT, then press the Test button, or press the Service Credit button.

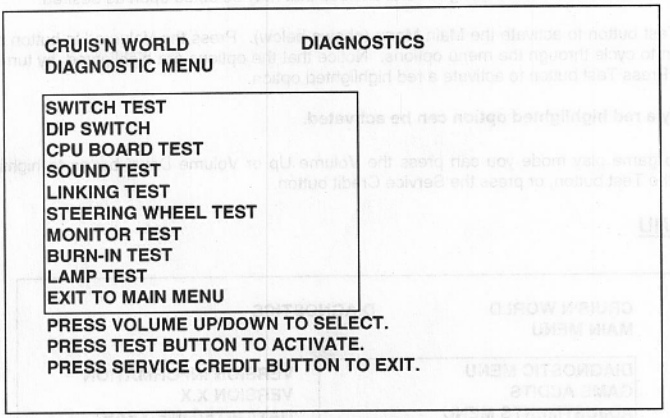
MAIN MENU



MAIN MENU

DIAGNOSTIC MENU

To enter the Diagnostic Menu from the Main Menu, press the Volume Up or Volume Down button to highlight the option, then press the Test button to activate. To exit the Diagnostic Menu, press the Volume Up or Volume Down button to highlight EXIT, then press the Test button. Or, press the Service Credit button.

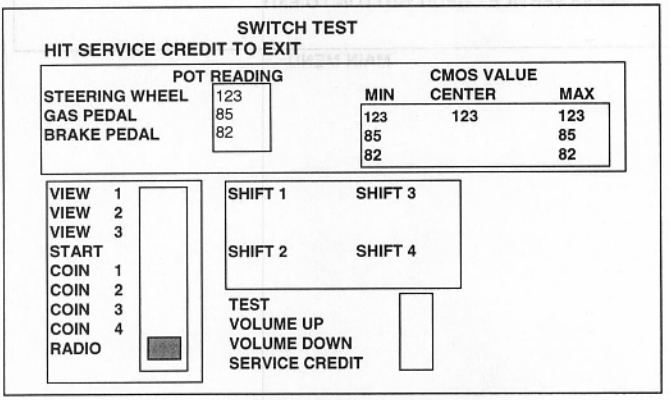


DIAGNOSTIC MENU

Switch Test

The Switch Test allows the operator to test the switches on the control panel and the coin door.

Select the Switch Test by pressing the Volume Up or Volume Down button to highlight the option, then press Test button. Press a switch on the control panel or coin door to cause the corresponding switch location on the screen to light.



SWITCH TEST SCREEN

Dip Switch Test

The DIP Switch Test allows the operator to check the location of the two 8-position DIP switches on the CPU Board. The operator can also change the setting of each position of each DIP Switch during this mode.

To enter the test, press the Volume Up or Volume Down button to highlight the DIP Switch Test, then press the Test button. The screen displays a layout of their current settings. To change a DIP Switch setting, move the switch to the desired setting, then check the screen to verify that the switch now shows the new setting. Press the Service Credit button to exit the DIP Switch Test.

DIP Switch 2 Settings Table (U97)

	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8
Test Normal	OFF ON							
Not Used		OFF ON						
Stand Up Sit Down			OFF ON					
Total Number of Games Linked 2 Linked Games 3 Linked Games 4 Linked Games				ON OFF OFF	ON ON OFF			
Link Enable Link Disable						ON OFF		
Game Linking I.D. Number Master (game #1) Slave (game #2) Slave (game #3) Slave (game #4)							ON ON OFF OFF	ON OFF ON OFF

LINKING NOTES:

1) To set up linking, U97 switch #6 must be ON.

2) For a 2-way link, the game on the left is the master (game #1) the game on the right is the slave (game #2). On DIP Switch 2 (U97), switches #4 and #5 must be set for two linked games (#4 ON, #5 ON).

3) For a 3-way link, the game on the left is the master (game #1) the game in the center is a slave (game #2) and the game on the right is a slave (game #3). On DIP Switch 2 (U97), switches #4 and #5 must be set for three linked games (#4 OFF, #5 ON).

4) For a 4-way link, the game on the left is the master (game #1) the game on the left center is a slave (game #2) the game on the right center is a slave (game #3) the game on the right is a slave (game #4). On DIP Switch 2 (U97), switches #4 and #5 must be set for four linked games (#4 OFF, #5OFF).

The dedicated Cruis'n World CPU is shipped from the factory ready to link. To link two games, you need to use one cable. To link three games, you need to use two cables. To link four games, you need to use three cables.

The cables attach to the rear of the game, in the lower right corner. There are two connectors on each bracket. There will be one connector left open on the first game and one connector left open on the last game.

THE LINKING CABLE PART NUMBER IS 5797-14511-00

DIP Switch 3 Settings Table (U19)

COIN MODE	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8
USA1	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
USA3	OFF	OFF	OFF	OFF	OFF	ON	OFF	
USA7	OFF	OFF	OFF	OFF	OFF	OFF	ON	
USA8	OFF	OFF	OFF	OFF	OFF	ON	ON	
GERMAN1	ON	OFF	OFF	OFF	OFF	OFF	OFF	
GERMAN2	ON	OFF	OFF	OFF	OFF	ON	OFF	
GERMAN3	ON	OFF	OFF	OFF	OFF	OFF	ON	
GERMAN4	ON	OFF	OFF	OFF	OFF	ON	ON	
FRENCH1	OFF	ON	OFF	OFF	OFF	OFF	OFF	
FRENCH2	OFF	ON	OFF	OFF	OFF	ON	OFF	
FRENCH3	OFF	ON	OFF	OFF	OFF	OFF	ON	
FRENCH4	OFF	ON	OFF	OFF	OFF	ON	ON	
CANADA1	ON	ON	OFF	OFF	OFF	OFF	OFF	
CANADA2	ON	ON	OFF	OFF	OFF	ON	OFF	
CANADA3	ON	ON	OFF	OFF	OFF	OFF	ON	
SWISS1	OFF	OFF	ON	OFF	OFF	OFF	ON	
SWISS2	OFF	OFF	ON	OFF	OFF	ON	OFF	
SWISS3	OFF	OFF	ON	OFF	OFF	OFF	OFF	
ITALY1	ON	OFF	ON	OFF	OFF	OFF	OFF	
ITALY2	ON	OFF	ON	OFF	OFF	ON	OFF	
ITALY3	ON	OFF	ON	OFF	OFF	OFF	ON	
UK1	OFF	ON	ON	OFF	OFF	OFF	OFF	
UK2	OFF	ON	ON	OFF	OFF	ON	OFF	
UK3	OFF	ON	ON	OFF	OFF	OFF	ON	
SPAIN1	ON	ON	ON	OFF	OFF	OFF	OFF	
SPAIN2	ON	ON	ON	OFF	OFF	ON	OFF	
SPAIN3	ON	ON	ON	OFF	OFF	OFF	ON	
SPAIN4	ON	ON	ON	OFF	OFF	ON	ON	
AUSTRALIA1	OFF	OFF	OFF	ON	OFF	OFF	OFF	
AUSTRALIA2	OFF	OFF	OFF	ON	OFF	ON	OFF	
AUSTRALIA3	OFF	OFF	OFF	ON	OFF	OFF	ON	
AUSTRALIA4	OFF	OFF	OFF	ON	OFF	ON	ON	
JAPAN1	ON	OFF	OFF	ON	OFF	OFF	OFF	
JAPAN2	ON	OFF	OFF	ON	OFF	ON	OFF	
JAPAN3	ON	OFF	OFF	ON	OFF	OFF	ON	
TAIWAN1	OFF	ON	OFF	ON	OFF	OFF	OFF	
TAIWAN2	OFF	ON	OFF	ON	OFF	ON	OFF	
TAIWAN3	OFF	ON	OFF	ON	OFF	OFF	ON	
AUSTRIA1	ON	ON	OFF	ON	OFF	OFF	OFF	
AUSTRIA2	ON	ON	OFF	ON	OFF	ON	OFF	
AUSTRIA3	ON	ON	OFF	ON	OFF	OFF	ON	
AUSTRIA4	ON	ON	OFF	ON	OFF	ON	ON	
BELGIUM1	OFF	OFF	ON	ON	OFF	OFF	OFF	
BELGIUM2	OFF	OFF	ON	ON	OFF	ON	OFF	
BELGIUM3	OFF	OFF	ON	ON	OFF	OFF	ON	
SWEDEN1	OFF	OFF	OFF	OFF	ON	OFF	OFF	
FINLAND1	ON	OFF	OFF	OFF	ON	OFF	OFF	
NETHERLAND1	OFF	ON	OFF	OFF	ON	OFF	OFF	
NETHERLAND2	OFF	ON	OFF	OFF	ON	ON	OFF	
NORWAY1	ON	ON	OFF	OFF	ON	OFF	OFF	
DENMARK1	OFF	OFF	ON	OFF	ON	OFF	OFF	
HUNGARY1	ON	OFF	ON	OFF	ON	OFF	OFF	
GENERAL1	ON	ON	ON	OFF	ON	OFF	OFF	
GENERAL3	ON	ON	ON	OFF	ON	ON	OFF	
GENERAL5	ON	ON	ON	OFF	ON	OFF	ON	
GENERAL7	ON	ON	ON	OFF	ON	ON	ON	
COIN COUNTER MODE								
ONE COUNTER								OFF*
TWO COUNTERS								ON

*Factory Default

Note: Switches 1 through 5 select country. Switches 6 & 7 select one of four modes in the country.

CPU Board Test
The CPU Board Test (much like the Start-up Test) allows the operator to check the RAMs and ROMs.

Highlight the CPU Board test with the Volume Up or Volume Down buttons then, press the Test button. When this test is activated, a "rug" pattern appears on the screen. The screen then changes to show the layout of the RAMs and ROMs on the CPU. Any chip that is shown as gray with a white outline and should turn green during the CPU Test. During the test, chips are good if they turn green; they are faulty if they turn red. The game automatically returns to the Diagnostic Menu.

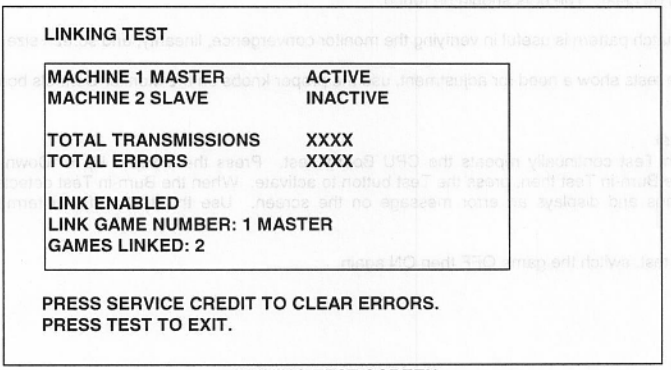
Sound Board Test
The Sound Test allows listening to some of the sounds that **Cruis'n World** is capable of producing.

To enter the test, press the Volume Up or Volume Down button to highlight the Sound Board test, then press the Test button.

Press the Volume Up button to change the music selection. Press the Volume Down button to trigger a sound effect. Press the Service Credit button to exit to the Diagnostic Menu.

Linking Test
The Linking Test checks the linking between games.

To enter the test, press the Volume Up or Volume Down button to highlight the Linking Test then, press the Test button.



LINKING TEST SCREEN

Press the Test button to exit to the Diagnostic Menu.

Steering Wheel Test
The Steering Wheel Test allows the operator to check the left to right movement of the steering wheel.

Before proceeding, make sure hands and any other objects are clear of the steering wheel. Upon entering this test, the steering wheel will automatically turn to the left to begin the testing procedure.

Highlight the Steering Wheel Test with the Volume Up or Volume Down button then, press the Test button. The steering wheel turns to the left. Press the Test button and it turns to the right. Press Test button again to return to the Diagnostic Menu.

Monitor Patterns
The Monitor Patterns Test provides a menu for testing the monitor.

Highlight the test with the Volume Up or Volume Down button and activate with the Test button. Continue pressing the Test button to cycle through the test and automatically return to the Main Menu.

The **RED, GREEN,** and **BLUE SCREEN** tests fill the screen with red, green, or blue.

The **COLOR BARS** test fills the screen with 15 color bars in different shades to help with red, green, and blue level adjustments. Each color should appear sharp and clear.

The Color Bars screen is useful in adjusting the monitor brightness and contrast.

The **CROSSHATCH PATTERNS** test fills the screen with a grid and a series of dots. The grid and the dots should be clear. The dots should be round.

The Crosshatch pattern is useful in verifying the monitor convergence, linearity, and screen size.

If any of the tests show a need for adjustment, use the proper knobs on the Monitor Controls board.

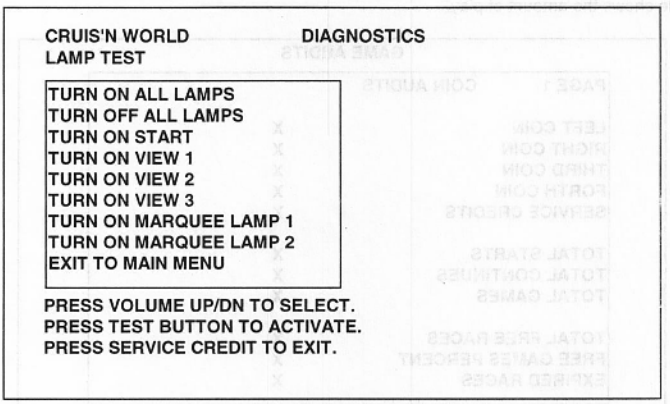
Burn-in Test
The Burn-in Test continually repeats the CPU Board Test. Press the Volume Up or Down Switch to highlight the Burn-in Test then, press the Test button to activate. When the Burn-in Test detects an error, the test stops and displays an error message on the screen. Use this test to find intermittent CPU problems.

To exit this test, switch the game OFF then ON again.

Lamp Test

The Lamp Test flashes the selected lamp(s).

To enter the test, press the Volume Up or Volume Down button to highlight the Lamp Test, then press the Test button.


CRUIS'N WORLD DIAGNOSTICS
LAMP TEST
TURN ON ALL LAMPS
TURN OFF ALL LAMPS
TURN ON START
TURN ON VIEW 1
TURN ON VIEW 2
TURN ON VIEW 3
TURN ON MARQUEE LAMP 1
TURN ON MARQUEE LAMP 2
EXIT TO MAIN MENU
PRESS VOLUME UP/DN TO SELECT.
PRESS TEST BUTTON TO ACTIVATE.
PRESS SERVICE CREDIT TO EXIT.

LAMP TEST SCREEN

Press the Service Credit button to exit to the Diagnostic Menu.

GAME AUDITS

To enter Game Audits from the Main Menu, press the Volume Up or Volume Down button to highlight the option, then press the Test button. To advance to the next page of the Game Audit Table, press the Volume Up or Volume Down button. Press the Test button to exit.

The Game Audits Table records the game play statistics. The left side of the table names the Audit item; the right side shows the amount of play.

GAME AUDITS

PAGE 1	COIN AUDITS
LEFT COIN	X
RIGHT COIN	X
THIRD COIN	X
FORTH COIN	X
SERVICE CREDITS	X
TOTAL STARTS	X
TOTAL CONTINUES	X
TOTAL GAMES	X
TOTAL FREE RACES	X
FREE GAMES PERCENT	X
EXPIRED RACES	X

PRESS VOLUME UP/DN FOR NEXT PAGE.
PRESS SERVICE CREDIT BUTTON TO EXIT.

PAGE 1 OF AUDIT TABLE

GAME AUDITS

PAGE 2	MISC AUDITS
1 PLAYER GAMES	X
2 PLAYER GAMES	X
3 PLAYER GAMES	X
4 PLAYER GAMES	X
POWER ON TIME SECS	X
GAME TIME SECS	X
AVERAGE GAME TIME SECS	X
SPINOUTS	X
EVENT	X
U-GAMES	X
WATCH DOGS	X
BURN-IN LOOPS	X

PRESS VOLUME UP/DN FOR NEXT PAGE.
PRESS SERVICE CREDIT BUTTON TO EXIT.

PAGE 2 OF AUDIT TABLE

GAME AUDITS

PAGE 3	VEHICLE SELECTED
VENOM SELECTED	X
KAMIKAZE SELECTED	X
HUMVEE SELECTED	X
ZOMBI SELECTED	X
GIMPEE SELECTED	X
RHINO 4X4 SELECTED	X
BANZI SELECTED	X
SEXIUM SELECTED	X
ORCA SELECTED	X
LADY BUG SELECTED	X
ROAD KING SELECTED	X
EL DIABLO SELECTED	X

PRESS VOLUME UP/DN FOR NEXT PAGE.
PRESS SERVICE CREDIT BUTTON TO EXIT.

PAGE 3 OF AUDIT TABLE

GAME AUDITS

PAGE 4	SPECIAL EFFECTS
AUTOMATIC SELECTED	X
MANUAL SELECTED	X
CUSTOM PAINT JOBS	X
WHEELIES	X
HORN BEEPED	X
TRICK JUMPS	X
SPINOUTS	X
CAM 1 TIME SECS	X
CAM 2 TIME SECS	X
CAM 3 TIME SECS	X

PRESS VOLUME UP/DN FOR NEXT PAGE.
PRESS SERVICE CREDIT BUTTON TO EXIT.

PAGE 4 OF AUDIT TABLE

GAME AUDITS

PAGE 5 INDIVIDUAL TRACK SELECTED

SELECT HAWAII	X
SELECT JAPAN	X
SELECT AUSTRALIA	X
SELECT CHINA	X
SELECT AFRICA	X
SELECT EGYPT	X
SELECT MOSCOW	X
SELECT GERMANY	X
SELECT ITALY	X
SELECT FRANCE	X
SELECT ENGLAND	X
SELECT MEXICO	X
SELECT NEW YORK	X
SELECT FLORIDA	X

PRESS VOLUME UP/DN FOR NEXT PAGE.
PRESS SERVICE CREDIT BUTTON TO EXIT.

PAGE 5 OF AUDIT TABLE

GAME AUDITS

PAGE 6 CRUIS'N WORLD STARTS

SELECT HAWAII	X
SELECT JAPAN	X
SELECT AUSTRALIA	X
SELECT CHINA	X
SELECT AFRICA	X
SELECT EGYPT	X
SELECT MOSCOW	X
SELECT GERMANY	X
SELECT ITALY	X
SELECT FRANCE	X
SELECT ENGLAND	X
SELECT MEXICO	X
SELECT NEW YORK	X
SELECT FLORIDA	X

PRESS VOLUME UP/DN FOR NEXT PAGE.
PRESS SERVICE CREDIT BUTTON TO EXIT.

PAGE 6 OF AUDIT TABLE

GAME AUDITS

PAGE 7 TRACK WINS

HAWAII WINS	X
JAPAN WINS	X
AUSTRALIA WINS	X
CHINA WINS	X
AFRICA WINS	X
EGYPT WINS	X
MOSCOW WINS	X
GERMANY WINS	X
ITALY WINS	X
FRANCE WINS	X
ENGLAND WINS	X
MEXICO WINS	X
NEW YORK WINS	X
FLORIDA WINS	X

PRESS VOLUME UP/DN FOR NEXT PAGE.
PRESS SERVICE CREDIT BUTTON TO EXIT.

PAGE 7 OF AUDIT TABLE

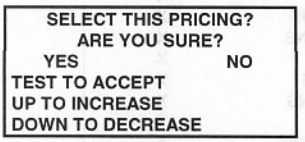
ADJUSTMENTS MENU

NOTE: Game Adjustments are explained in more detail on the following pages.

Press the Volume Up or Volume Down button to highlight the Adjustments Menu option on the Main Menu, then press the Test button.

The Adjustments Menu option allows the owner/operator to change the Game Pricing and Game Difficulty.

The Adjustments Menu offers several options. Press the Volume Up or Volume Down button to highlight an option, then press the Test button. The activated item provides a setting choice. Press the Volume Up or Volume Down button to change the current setting value. A confirmation box appears. For example:



Press the Volume Up or Volume Down button to select YES or NO, then press the Test button to lock in the new setting.

GAME ADJUSTMENT MENU

To exit the Adjustments Menu, press the Volume Up or Volume Down button to highlight EXIT TO MAIN MENU, then press Test button. Or, press the Service Credits button.

Standard Pricing

This allows the operator to choose any of the "Standard" selections for the Standard Pricing Table.

Standard Pricing Table

Name	Settings Credit/Coin	Left Chute	Center Chute	Right Chute	Fourth Chute
USA 1	1/3X25	.25	.25	.25	$1.00
USA 2	1/2X25	.25	.25	.25	$1.00
USA 3	1/4X25	.25	.25	.25	$1.00
USA 4	1/5X25	.25	.25	.25	$1.00
USA 5	1/6X25	.25	.25	.25	$1.00
USA 6	1/8X25	.25	.25	.25	$1.00
USA 7	1/8X25, 1/2X100, 3/500	.25	.25	.25	$1.00
USA 8	1/25, 3X25/START, 2X25 CONT	.25	.25	.25	$1.00
USA 9	1/25, 2X25/START, 1/25 CONT	.25	.25	.25	$1.00
USA 10	200/START, 150 CONT	.25	.25	.25	$1.00
USA 11	1/6X25, 4/500	.25	.25	.25	$1.00
USA 12	100/START, 3X25/CONT	.25	.25	.25	$1.00
GERMAN 1	1/3X1DM, 2/5DM	1DM		5DM	
GERMAN 2	1/1DM, 5/5DM	1DM		5DM	
GERMAN 3	1/2X1DM, 3/5DM	1DM		5DM	
GERMAN 4	2/5DM, 1/3X1DM ECA	5DM	1DM	2DM	
GERMAN 5	3/5DM, 1/2DM, 1/2X1DM ECA	5DM	1DM	2DM	
GERMAN 6	1/3X1DM, 2/5DM NO BONUS	1DM		5DM	
GERMAN 7	1/2X1DM, 3/5DM NO BONUS	1DM		5DM	
GERMAN 8	1/1DM, 6/5DM NO BONUS	1DM		5DM	
FRANCE 1	2/5F, 5/10F	5F	10F		
FRANCE 2	2/5F, 4/10F	5F	10F		
FRANCE 3	1/5F, 3/10F	5F	10F		
FRANCE 4	1/5F, 2/10F	5F	10F		
FRANCE 5	2/5F, 5/10F, 11/2 X 10F	5F	10F		
FRANCE 6	2/5F, 4/10F, 9/2 X 10F	5F	10F		
FRANCE 7	1/5F, 3/10F, 7/2 X 10F	5F	10F		
FRANCE 8	1/5F, 2/10F, 5/2 X 10F	5F	10F		
FRANCE 9	1/3 X 1F, 2/5F	1F	5F		
FRANCE 10	1/2 X 1F, 3/5F	1F	5F		
FRANCE 11	1/3 X 1F, 2/5F, 5/2 X 5F	1F	5F		
FRANCE 12	1/2 X 1F, 3/5F, 7/2 X 5F	1F	5F		
FRANCE ECA	1/3 X 1F, 2/5F, 5/2 X 5F		5F	10F	20F
CANADA 1	1/2X25, 2/100	.25		$1.00	
CANADA 2	1/4X25, 1/100	.25		$1.00	
CANADA3	1/4X25, 1/100, 3/2X100	.25		$1.00	
SWISS 1	1/2X1F, 3/5F	1F		5F	
SWISS 2	1/1F, 5/5F	1F		5F	
SWISS 3	1/3X1F, 2/5F	1F		5F	
ITALY 1	1/500LIRE	500 LIRE		500 LIRE	
ITALY 2	1/2X500LIRE	500 LIRE		500 LIRE	
ITALY 3	1/4X500LIRE	500 LIRE		500 LIRE	
UK 1	2/100P, 1/50P, ECA	100P	20P	50P	10P
UK 2	1/100P, 1/2X50P, ECA	100P	20P	50P	10P
UK 3	1/3X20P, 1/50P	20P		50P	
SPAIN 1	1/100PESETA, 6/500PESETA	100P		500P	
SPAIN 2	3/2X100PESETA, 7/500PESETA	100P		500P	
SPAIN 3	100PESETA, 5/500PESETA	100P		500P	
SPAIN 4	1/2X100PESETA, 3/500PESETA	100P		500P	
SPAIN 5	2/100PESETA, 10/500PESETA	100P		500P	
SPAIN 6	1/100PESETA ECA	25P	200P	100P	500P
AUSTRALIA 1	1/5X20, 1/100	.20		$1.00	
AUSTRALIA 2	1/10X20, 1/2X100	.20		$1.00	
AUSTRALIA 3	1/2X100	$1.00		$2.00	
AUSTRALIA 4	1/3X100	$1.00		$2.00	
JAPAN 1	1/1	100 YEN		100 YEN	
JAPAN 2	1/2	100 YEN		100YEN	
JAPAN 3	1/100 YEN, 3/500YEN	100 YEN		500YEN	
TAIWAN 1	1/ 10	10 YUAN		10 YUAN	
TAIWAN 2	2/2	.25YUAN		.25 YUAN	
TAIWAN 3	2/1	1 COIN		1 COIN	
AUSTRIA 1	1/5 SCH, 2/10 SCH	5 SCHILLINGS		10 SCHILLINGS	
AUSTRIA 2	1/10 SCH, 3/20 SCH	10 SCHILLINGS		20 SCHILLINGS	
AUSTRIA 3	1/2 X5 SCH, 1/10 SCH	5 SCHILLINGS		10 SCHILLINGS	
AUSTRIA 4	1/2 X 10 SCH, 2/30 SCH	10 SCHILLING		20 SCHILLINGS	
BELGIUM	1/20BFR, 3/50BFR	20BFR		50BFR	
SWEDEN	1/10KR	1KR	5KR	10KR	
FINLAND	1/5MARKKA	1 MARKKA	5 MARKKA	10 MARKKA	
NETHERLANDS 1	1/2.50HFI	2.50 HFI		2.50 HFI	
NETHERLANDS 2	1/1HFI, 3/2.50HFI	1HFI		2.50 HFI	
NORWAY	1/5 KRONE	5 KRONE	10 KRINE	20 KRONE	
DENMARK	1/5KRONE	1 KRONE	5 KRONE	10 KRONE	20 KRONE
HUNGARY	1/4 X 20FORINT, 2/140 FORINT	20 FORINT		20 FORINT	
GENERAL 1	1/1 COIN	1 COIN		1 COIN	
GENERAL 2	1/2 COIN	1 COIN	1 COIN	1 COIN	4 COINS
GENERAL 3	1/3 COIN	1 COIN	1 COIN	1 COIN	4 COINS
GENERAL 4	1/4 COIN	1 COIN	1 COIN	1 COIN	4 COINS
GENERAL 5	1/5 COIN	1 COIN	1 COIN	1 COIN	4 COINS
GENERAL 6	1/6 COIN	1 COIN	1 COIN	1 COIN	4 COINS
GENERAL 7	2/1 COIN	1 COIN	1 COIN	1 COIN	4 COINS
GENERAL 8	3/1 COIN	1 COIN	1 COIN	1 COIN	4 COINS

Custom Pricing
Custom Pricing allows the operator to install pricing other than that of the Standard Pricing Table. Custom Pricing also allows the operator to select the amount of credits required to start a game and the amount of credits required to continue a game. This option is adjusted from the Dip Switch Settings.

Custom Pricing

COIN SLOT (1) UNITS
COIN SLOT (2) UNITS
COIN SLOT (3) UNITS
COIN SLOT (4) UNITS
BONUS UNITS
MINIMUM UNITS
UNITS TO START
SELECT CUSTOM PRICING
SHOW FRACTIONS
EXIT TO MAIN MENU

Coin Slot (1) Unit: Coin Slot (2) Unit: Coin Slot (3) Unit: Coin Slot (4) Unit:	Coins inserted accumulate units. This adjustment specifies the number of units given for each coin in each chute (see "units/credit").
Bonus Units:	One bonus credit is awarded after this many coin units have accumulated.
Minimum Units:	No credits will be awarded until this many coin units have accumulated.
Units to Start:	Units needed for one credit.
Select Custom Pricing:	When set to yes custom pricing is enabled.
Show Fractions:	When set to yes, fractional credits will be seen on the credits screen.

Free Play
This option selects free play. The setting choices for this adjustment are:
-On
-Off
-Factory Setting: Off

First Place Awards Free Game
Awards a player a free game on 1st position. The setting choices for this adjustment are:
-On
-Off
-Factory Setting: Off

Start Time Bonus Seconds
This determines the initial time a player is given to finish a race. The setting range is:
-Maximum: 90
-Minimum: 60
-Factory Setting: 75

Checkpoint Bonus Time Seconds
This awards the player a time bonus for passing a checkpoint.
-Maximum: 10
-Minimum: 25
-Factory Setting: 20

Attract-Mode Sound
This determines whether the game will make sounds in the attract mode. The settings for this adjustment are:
-On
-Off
-Factory Setting: Off

High Score Entry
This determines whether the game will allow High Score Entry and Display Table. The setting choices are:
-On
-Off
-Factory Setting: On

Minimum Volume Level
This determines the minimum level allowed when setting the volume of the sound board. The setting range is:
-Maximum: 30
-Minimum: 0
-Factory Setting: 11

Speed in MPH or KPH
This determines speedometer setting in miles per hour or kilometers per hour. The setting choices are:
-MPH
-KPH
-Factory Setting: MPH

Show Road Kill
This determines if dead animals are shown in the game. The setting choices are:
-Off
-On
-Factory Setting: On

Show Ending
This determines if an image of a president shows in the game. The setting choices are:
-Off
-On
-Factory Setting: On

Show Girls
This determines is "sexy" girls are shown in the game. The setting choices are:
-Off
-On
-Factory Setting: On

High Score Reset Every
The number of games played before an automatic reset of High Score occurs. The setting range is 1000 to 25,000.
-Factory Setting: 5000

Game Difficulty
This allows the operator to select the difficulty level of the game. The setting range is:
-Easiest: 0
-Hardest: 9
-Factory Setting: 5

Maximum Credits
This determines the maximum number of credits stored ("coin-ups"). The setting range is:
-Maximum: 100
-Minimum: 30
-Factory Setting: 30

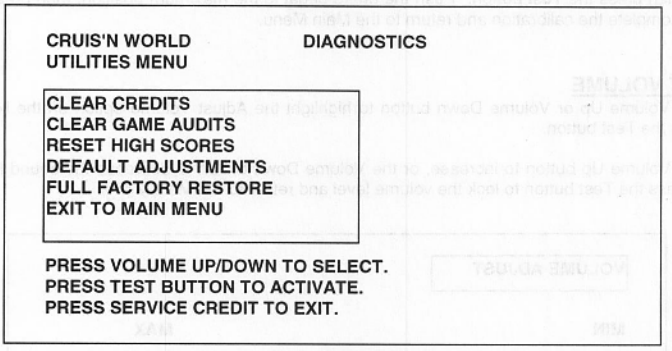
Steering Sensitivity
This determines the "feel" of the steering. The setting range is:
-Light: 0
-Heavy: 5
-Factory Setting: 3

Multi Player Free Race
This determines the minimum number of players for a free race. The setting range is:
-Off
-2, 3, or 4
-Factory Setting: Off

UTILITIES

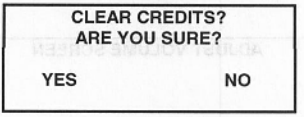
Press the Volume Up or Volume Down button to highlight the Utilities option on the Main Menu then, press the Test button.

The Utilities Menu allows the owner/operator to clear the games bookkeeping memory and to install a custom message.



UTILITIES MENU

Press the Volume Up or Volume Down button to highlight an item from the Utilities Menu, then press the Test button. After an item has been activated, you are given the option of resetting that item or not. For example:



Press the Volume Up or Volume Down button to choose YES or NO, then press the Test button to lock the choice and return to the Utilities Menu.

To exit the Utilities Menu, press the Volume Up or Volume Down button to highlight EXIT TO MAIN MENU, then press Test button. Or, press the Service Credit button.

CALIBRATE CONTROLS

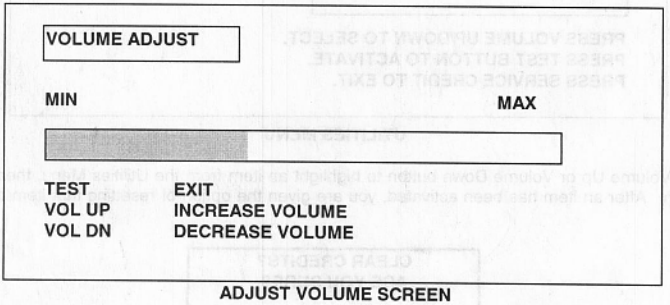
Press the Volume Up or Volume Down button to highlight the Calibrate Controls option on the Main Menu, then press the Test button.

Remove hands and feet from all controls. Set the steering wheel to the center position, then press the Test button. Turn the steering wheel to the left-most position, then press the Test button. Turn the steering wheel to the right-most position, then press the Test button. Push the gas pedal to the maximum position, then press the Test button. Push the brake pedal to the maximum position, then press the Test button to complete the calibration and return to the Main Menu.

ADJUST VOLUME

Press the Volume Up or Volume Down button to highlight the Adjust Volume option on the Main Menu, then press the Test button.

Press the Volume Up button to increase, or the Volume Down button to decrease the sound level of the game. Press the Test button to lock the volume level and return to the Main Menu.



ADJUST VOLUME SCREEN

MIDWAY

JANUARY 1998
16-10470

CRUIS'N USA
-to-
CRUIS'N WORLD

Conversion Kit Manual Amendment

Installation and
Parts Information

WARNINGS & NOTICES

WARNING

USE OF NON-MIDWAY PARTS OR CIRCUIT MODIFICATIONS MAY CAUSE SERIOUS INJURY OR EQUIPMENT DAMAGE! USE ONLY MIDWAY AUTHORIZED PARTS.

* Substitute parts or modifications may void EMC directive or FCC type acceptance.
* Use only authorized components and parts. For safety and reliability, substitute parts and modifications are not recommended. Failure to do so will void warranty and may result in incorrect and/or unsafe operation.
* This game is protected by federal copyright, trademark and patent laws. Unauthorized modifications may be illegal under federal law. This also applies to MIDWAY logos, designs, publications and assemblies. Moreover, facsimiles of MIDWAY equipment (or any feature thereof) may be illegal under federal law, regardless of whether or not such facsimiles are manufactured with MIDWAY components.

CRUIS'N USA

-to-

CRUIS'N WORLD

Conversion Kit Manual Addendum

Installation and
Parts Information

WARNINGS & NOTICES

WARNING
USE OF NON-MIDWAY PARTS OR CIRCUIT MODIFICATIONS MAY CAUSE SERIOUS INJURY OR EQUIPMENT DAMAGE! USE ONLY MIDWAY AUTHORIZED PARTS.
* For safety and reliability, substitute parts and modifications are not recommended.
* Substitute parts or modifications may void EMC directive or FCC type acceptance.
* Use only authorized components and parts. Failure to do so will void warranty and may result in incorrect and/or unsafe operation.
* This game is protected by federal copyright, trademark and patent laws. Unauthorized modifications may be illegal under federal law. This also applies to MIDWAY logos, designs, publications and assemblies. Moreover, facsimiles of MIDWAY equipment (or any feature thereof) may be illegal under federal law, regardless of whether or not such facsimiles are manufactured with MIDWAY components.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generated, uses and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

When MIDWAY ships a game, it is in compliance with FCC regulations. Your label is proof. If the label is missing or damaged, legal repercussions to the owner or distributor of the game may result. If your game does not contain an FCC label, call MIDWAY immediately.

WARNING
Plug this game into a properly grounded outlet to prevent shock hazards and assure proper game operation. Do not use a cheater plug to defeat the power cord's grounding pin. Do not cut off the ground pin.

WARNING
A very small portion of the population has a condition which may cause them to experience epileptic seizures or have momentary loss of consciousness when viewing certain kinds of flashing lights or patterns that are present in our daily environment. These persons may experience seizures while watching some kinds of television pictures or playing certain video games. People who have not had any previous seizures may nonetheless have an undetected epileptic condition.

If you or anyone in your family has experienced symptoms linked to an epileptic condition (e.g. seizures or loss of awareness), immediately consult your physician before using any video games.

We recommend that parents observe their children while they play video games. If you or your child experience the following symptoms: dizziness, altered vision, eye or muscle twitching, involuntary movements, loss of awareness, disorientation, or convulsions, DISCONTINUE USE IMMEDIATELY and consult your physician.

NOTICE
Information in this manual is subject to change without notice. MIDWAY reserves the right to make improvements in equipment function, design, or components as progress in engineering or manufacturing methods may warrant.

NOTICE
No part of this publication may be reproduced by any mechanical, photographic, or electronic process, or in the form of a phonographic recording, nor may be transmitted, or otherwise copied for public or private use, without permission from the publisher.

FOR SERVICE: CALL YOUR AUTHORIZED MIDWAY DISTRIBUTOR.

© Copyright 1998 MIDWAY Games Inc. All Rights reserved.

SAFETY NOTICES

The following safety instructions apply to all operators and service personnel. Specific warnings and cautions will be found throughout this manual where they apply. We recommend that you read this page before preparing your game for play.

⚠ CAUTION

HANDLING ELECTRONIC DEVICES: Observe the following precautions for handling electronic devices.

1) Ensure that the A.C. power to the game is turned off prior to servicing the electronics.
2) Discharge any static electricity build up in your body by touching a safety ground point such as the power supply chassis. This must be done BEFORE touching or handling the electronic assemblies.
3) Store the electronic assemblies in an anti-static area. Anti-static bags must be used to store the CPU board assembly. Use the same bag to save the old CPU assembly after the new unit is installed.
4) DO NOT remove or connect any electronic assemblies when the cabinet power is on. Doing so will damage the electronic assemblies and void the warranty.

DISCONNECT POWER DURING INSTALLATION OR REPAIRS. Always turn your game OFF and unplug it before attempting to service or install your kit. Installing or repairing PC boards with power ON can damage components and void the warranty. Be sure that all ground wires are installed securely.

PROPERLY GROUND THE GAME. To avoid electrical shocks, do not plug in the game until it has been inspected and properly grounded. This game should only be plugged into a grounded 3-wire outlet. Do not use a "cheater" plug or cut off the ground pin on the line cord.

USE PROPER FUSE. To avoid electrical shock, all replacement fuses must match the original fuse in fuse type, voltage rating, and current rating.

SALVAGED PARTS. Parts salvaged from old games are required to complete your kit. These salvaged parts must operate perfectly; otherwise, the converted game cannot perform properly or safely. Always repair circuit board malfunctions and cabinet damage before conversion is attempted.

POWER SUPPLY. Be sure the power supply from your old game is capable of +5Vdc at 5A, -5Vdc at 1A, and +12Vdc at 3A. All power supply voltages are ±5% under load. These operating voltages are necessary for the kit. Your power supply must be FCC approved.

WIRING. This kit uses as much of the existing wiring as possible. To avoid errors in operation, verify that the wiring is an exact match with the diagrams after the conversion is completed.

SPEAKERS. This kit is intended for stereo full range speaker systems handling at least 10 WATTS.

MONITOR. This kit is not intended for use with X-Y monitors. Suitable monitors have horizontally mounted CRTs and raster electronics with inputs for RGB video and COMPOSITE NEGATIVE SYNC.

COIN MECHANISMS. Be sure to clean and test your game coin mechanisms with known currency. Servicing of these mechanisms is crucial to your game's earning potential and operation.

COIN METERS. Coin meters are not provided with this kit. Wiring information is provided as a convenience to the operator. Existing meters may be used provided their operation is verified.

HANDLE FLUORESCENT TUBE AND CRT WITH CARE. If you drop a fluorescent tube or a CRT and it breaks, it will implode! Shattered glass can fly eight feet or more from the implosion.

MEMORY DEVICES. Leave the EPROMS and other Integrated Circuits in their protective packages until you are ready to install them. Store the original parts in the protective packaging for safekeeping.

PRODUCT SPECIFICATIONS

Player Variables	*Operator Variables*	*Diagnostics*
1 to 4 players per game (with linking)	Coinage, Game Options,	Automatic Power-Up Self-Test
Choice of vehicle, transmission, track	Difficulty, Volume, Audits,	Manual Multi-Level Menu System
Fastest Track Time Recognition	Statistics	

CABINET SAFETY REQUIREMENTS

For safe use of this game, install this kit into an original Midway Games Inc. "CRUIS'N USA" game cabinet only. It is not intended for use in a universal game cabinet.

NOTICE - FCC COMPLIANCE

INSTALLATION OF THIS KIT INTO ANY EXISTING PRODUCT DOES NOT GUARANTEE COMPLIANCE WITH FCC REQUIREMENTS. YOU ARE SOLELY RESPONSIBLE FOR FCC COMPLIANCE FOR INSTALLATIONS IN OTHER PRODUCTS. ANY EXISTING FCC COMPLIANCE STICKER MUST BE REMOVED AND A NEW STICKER SHOULD NOT BE INSTALLED ON THE CONVERTED PRODUCT UNTIL YOU HAVE VERIFIED FCC COMPLIANCE.

EPILEPSY WARNING

A very small portion of the population has a condition which may cause them to experience epileptic seizures or have momentary loss of consciousness when viewing certain kinds of flashing lights or patterns that are present in our daily environment. These persons may experience seizures while watching some kinds of television pictures or playing certain video games. People who have not had any previous seizures may nonetheless have an undetected epileptic condition.

If you or anyone in your family has experienced symptoms linked to an epileptic condition (e.g. seizures or loss of awareness), immediately consult your physician before using any video games.

We recommend that parents observe their children while they play video games. If you or your child experience the following symptoms: dizziness, altered vision, eye or muscle twitching, involuntary movements, loss of awareness, disorientation, or convulsions, DISCONTINUE USE IMMEDIATELY and consult your physician.

ATTENTION

PROPERLY ATTACH ALL CONNECTORS. *Be sure that the connectors on each printed circuit board (PCB) are properly connected. If they do not slip on easily, do not force them. A reversed connector may damage your game and void the warranty. All connectors are keyed to fit specific pins on each board.*

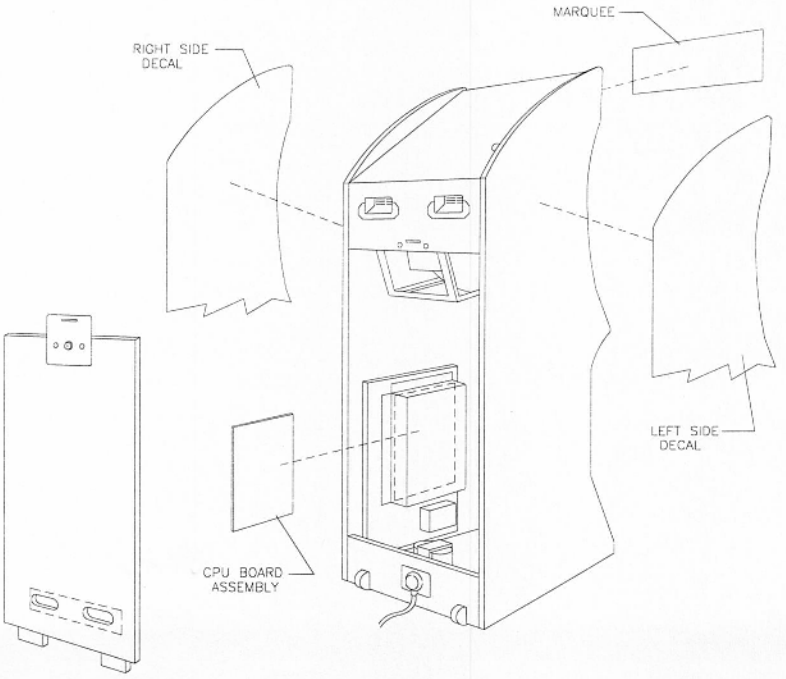
INSPECTION

Unpack the materials from the carton and inspect for obvious signs of damage. Use this checklist to be sure the kit is complete. You must supply the remainder of the materials required for this conversion.

	Part Number	Item	Quantity	Function
[ ]	A-21154	CPU Board Assembly	1	(CPU Board Assembly [shipped on tray])
[ ]	16-10470	Conversion Kit Manual Amendment	1	(additional information about the kit)
[ ]	16-44060-101	Conversion Kit Manual	1	(installation and operation instructions)
[ ]	31-2445-4	Marquee artwork	1	(identifies game cabinet to players)
[ ]	31-3041	Control Panel Left Side Decal	1	(to cover existing cabinet markings)
[ ]	31-3042	Control Panel Right Side Decal	1	(to cover existing cabinet markings)

Recommended tools and supplies

[ ] black semi-gloss paint
[ ] electric drill and wood drill bit set
[ ] screwdrivers
[ ] liquid soap (dishwashing detergent)
[ ] grease pencil or marker
[ ] nut drivers or socket wrench set
[ ] 180 grit sandpaper or electric sander
[ ] wood filler material (putty, glue, board, etc.)
[ ] black electrical tape
[ ] small screw assortment
[ ] razor knife
[ ] squeegee or soft sponge
[ ] soldering iron and solder
[ ] wire cutters
[ ] pliers
[ ] hole saw or equivalent



CONVERTING A CRUIS'N USA VIDEO GAME CABINET

CABINET MODIFICATIONS

Use these instructions if you are installing this kit into standup video cabinets (no seat pedestal). The decals will require trimming because this cabinet has smaller dimensions than other cabinets. Use the instructions in the 16-44060-101 manual for sit-down video cabinets (with seat pedestal).

1. Verify the operation of the existing game before making any changes to the cabinet. Pay special attention to those components that will be used again after conversion is completed (Power Supply, Video Monitor, Currency Acceptors, Wiring Harnesses, Cabinet Locks, Speakers, Fluorescent Lamp, Cooling Fans, Mounting Brackets, etc.). Repair or replace damaged parts before installing the kit.

2. Switch off power to the game. Disconnect the line cord from the A.C. power. Clear the work area. Cover or protect the non-wood items (marquee, monitor, coin door, brackets, line cord, etc.).

3. Do not remove existing decals or artwork from the cabinet. Clean off all glue residue. Fill gouges, unused holes, etc with quick-hardening wood putty. Sand the cabinet smooth and remove all dust.

4. Touch up cabinet repaired areas with black paint. Allow the paint to dry completely before continuing.

5. Lightly moisten the cabinet with soapy water. Remove the backing and apply the decal. Align the lower edge of the new decal with the graphic on the existing decal. Start at the bottom and work up. After the decal is in place, smooth it outwards, taking care to squeeze out air bubbles. If you can not remove an air bubble, pop it with a knife or pin and smooth it down. Trim the edges of the decal as needed to fit the shape of the cabinet. Allow at least 12 hours for the adhesive in the decal to set.

6. Remove the existing glass retainer, cover glass and marquee from the game cabinet. Check the lamp and install a new one if cracks or darkened ends are found, even if it still lights at the time of inspection. Install the new kit marquee. Using the previous marquee as a guide, trim the new marquee artwork to size. Clean the marquee glass before installing it in the game.

7. Unlock and remove the rear door of the cabinet. Use a vacuum cleaner to remove any dust or dirt in the cabinet. Do not disturb the position of cabinet wiring harnesses during cleaning.

8. Remove the cage cover from the game electronics to expose the CPU Board Assembly. Note the position of each wiring connector, then disconnect them from the CPU Board. Remove the mounting hardware and retain for reuse. Lift the existing assembly out of the cabinet and set it aside.

9. Remove the new CPU Board Assembly from its protective packaging and place it into the cabinet. Use the mounting hardware to fasten the new CPU Board where the previous assembly was located. Using the old board as a guide, reattach each of the wiring harness connectors to the assembly.

10. Reinstall the cage cover, being careful not to pinch any wires in the process. Failure to reconnect all ground wires or replace shields and covers with each mounting screw installed and securely tightened may result in improper game operation or radio frequency interference.

11. Connect the line cord to the game. Switch on the power and observe the video monitor. The game will begin self diagnostics. If no errors are found, the game will automatically enter its "attract" mode.

12. Consult the 16-44060-101 Conversion Kit Manual for game features, operation, adjustments, etc.

13. When proper operation is confirmed, the game may be tested for any additional agency approval.